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Definitions of **singular value decomposition** on the Web:

- Any $m \times n$ matrix X may be decomposed into three matrices U , D , V (with dimensions $m \times m$, $m \times n$, and $n \times n$, respectively) in the form: $X = UDV^t$, where the columns of U are orthogonal, D is a diagonal matrix of singular values, and the columns of V are orthogonal. The singular value decomposition of a variance-covariance matrix S is written as $S = ELE^t$, where L is the diagonal matrix of eigenvalues and E the matrix of eigenvectors.

life.bio.sunysb.edu/morph/glossary/gloss2.html

- affine transformation

www.cs.brown.edu/research/ai/dynamics/tutorial/Documents/Vocabulary.html

- In linear algebra the singular value decomposition (SVD) is an important factorization of a rectangular real or complex matrix, with several applications in signal processing and statistics. This matrix decomposition is analogous to the diagonalization of symmetric or Hermitian square matrices using a basis of eigenvectors given by the spectral theorem.

en.wikipedia.org/wiki/Singular_value_decomposition

Related phrases: [generalized singular value decomposition](#)

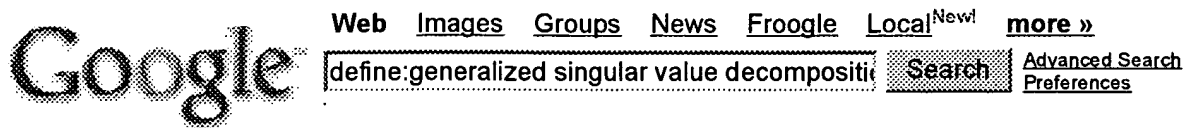
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Definitions of **generalized singular value decomposition** on the Web:

- In linear algebra the generalized singular value decomposition ('GSVD') is a matrix decomposition more general than the singular value decomposition. It is used to study the conditioning and regularization of linear systems with respect to quadratic semi-norms.

en.wikipedia.org/wiki/Generalized_singular_value_decomposition

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